# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

**NABL** - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377


Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/CEMENT/2015-16

Date: 04.07.2015

## TEST REPORT ON CEMENT

| | | |
|---|---|---|
| *** CUSTOMER** | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| ***AGENCY** | : | **Mr. B.T. Ravikumar,** No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079. |
| ***NAME OF THE WORK** | : | Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore. |
| **REFERENCE** | : | BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015 |
| **SAMPLE ID** | : | Cement |
| **SAMPLE RECEIVED ON** | : | 02.07.2015 |
| **PERIOD OF TESTING** | : | 02.07.2015 to 04.07.2015 |

The results of the tests conducted on the cement sample are as follows:

| Sl. No | Descriptions | Test Method as per IS | Test Result | Requirements as per IS: 8112-2013 |
|---|---|---|---|---|
| 1 | Standard Consistency | IS-4031 (Part -4) 1988(RA-2009) | 30.50 % | - |
| 2 | a) Initial Setting Time | IS-4031 (Part -5) 1988(RA-2009) | 155 Minutes | Not Less than 30 Minutes |
| | b) Final Setting Time | IS-4031 (Part -5) 1988(RA-2009) | 470 Minutes | Not More than 600 Minutes |
| 3 | Soundness by Le Chartlier Method | IS-4031 (Part-3) 1988(RA-2009) | 1 mm | Not more than 10mm |

*Information is furnished by the Customer/Representative.

Note:

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⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

*********

VISHWANATH I.A.
Chief Executive Officer


#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/SAND-Gradation/2015-16 : 04.07.2015

## TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. B.T. Ravikumar,**
No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079.

*** Name of Work** : Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015

**Technical Reference** : IS : 2386 Part 1 - 1963 RA-2007

**Sample ID** : Fine Aggregates

**Sample Received on** : 02.07.2015

**Date of Testing** : 04.07.2015

Total Wt. of Aggregates in gms **1000**

| Is Sieve Size in mm | Cumulative Weight Passing in % | Specific Limits as per IS 383-1970 (RA- 2007) | | | |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone-III | Zone-IV |
| 10 | 100 | 100 | 100 | 100 | 100 |
| 4.75 | 93.46 | 90-100 | 90-100 | 90-100 | 95-100 |
| 2.36 | 81.72 | 60-95 | 75-100 | 85-100 | 95-100 |
| 1.18 | 56.87 | 30-70 | 55-90 | 75-100 | 90-100 |
| 600 Micron | 25.64 | 15-34 | 35-59 | 60-79 | 80-100 |
| 300 Micron | 11.08 | 5-20 | 8-30 | 12-40 | 15-50 |
| 150 Micron | 4.83 | 0-10 | 0-10 | 0-10 | 0-15 |

* Information is furnished by the Customer/Representative

**Remarks :** This sample is under Zone-I specific limits.

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ದಕ್ಷಿಣ ಉಪವಿಭಾಗ, ಶಾಂತಿನಗರ ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ಶಿವಾಜಿನಗರ, ಬೆಂಗಳೂರು


#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/AGG/GR/2015-16 : 04.07.2015

## TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. B.T. Ravikumar,**
No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079.

*** Name of Work** : Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore.

**Reference** : BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015

**Technical Reference** : IS : 2386 Part 1 -1963 RA-2007

**Sample ID** : Coarse Aggregates (40mm)

**Sample Received on** : 02.07.2015

**Date of Testing** : 04.07.2015

Total Wt. of Aggregates in gms= **10000**

| Is Sieve Size in mm | Cumulative Weight Passing in % | Specific Limits as per IS 383-1970 (RA- 2007) | |
|---|---|---|---|
| | | Graded | Single Sized |
| 80 | 100 | 100 | - |
| 63 | 100 | - | 100 |
| 40 | 97.35 | 95-100 | 85-100 |
| 20 | 51.55 | 30-70 | 0-20 |
| 10 | 28.25 | 10-35 | 0-5 |
| 4.75 | 3.50 | 0-5 | - |

* Information is furnished by the Customer/Representative

**Remarks :** This sample is under graded specific limits.

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VISHWANATH. I.A
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E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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ISO 9001 REGISTERED


Job No.: CTCE/BBMP/BTR/W.No.13/STEEL/2015-16 07.07.2015

## TEST REPORT ON REINFORCEMENT STEEL

| | | |
|---|---|---|
| Client | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | : | **Mr. B.T. Ravikumar,** No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079. |
| Name of the work | : | Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore. |
| Reference | : | BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015 |
| Date of Test | : | 07.07.2015 |
| Technical Reference | : | IS: 1786-2008 |

| Sl. No | Nominal size (dia) (mm) | Mass per metre (Kg/mtr) | TENSILE STRENGTH | | | Bend Test | Rebend Test |
|---|---|---|---|---|---|---|---|
| | | | 0.20% proof stress/Yield stress N/mm² | Tensile strength (Ultimate stress) N/mm² | Elongation percent gauge length | | |
| 1 | 10 | 0.62 | 513 | 556 | 13.25 | O.K | O.K |

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M/s. Civil-Tech Consultants & Engineers
# 23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-3


#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/STEEL/2015-16 07.07.2015

## TEST REPORT ON REINFORCEMENT STEEL

| | | |
|---|---|---|
| Client | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | : | **Mr. B.T. Ravikumar,** No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079. |
| Name of the work | : | Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore. |
| Reference | : | BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015 |
| Date of Test | : | 07.07.2015 |
| Technical Reference | : | IS: 1786-2008 |

| Sl. No | Nominal size (dia) (mm) | Mass per metre (Kg/mtr) | TENSILE STRENGTH | | | Bend Test | Rebend Test |
|---|---|---|---|---|---|---|---|
| | | | 0.20% proof stress/Yield stress N/mm² | Tensile strength (Ultimate stress) N/mm² | Elongation percent gauge length | | |
| 1 | 12 | 0.89 | 515 | 558 | 13.50 | O.K | O.K |

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M/s. Civil-Tech Consultants & Engineers

# 23/14, 7th Cross, 3rd Stage,
4th Block, Shakthiganapathinagara,
Basaveshwaranagar,
Bangalore-560079.

AE-13


#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/CUBE/2015-16 17.08.2015

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. B.T. Ravikumar,**
No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079.

*** Name of the work** : Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore.

*** Reference** : BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015

*** Sample ID** : Cement Concrete

**Size of cubes** : 150mmx150mmx150mm

**Cross Sectional Area** : 22500 $mm^2$

**Technical Reference** : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : $M_{20}$

**Compressive Strength as o:** : $28^{th}$ day

**Sample Received on** : 20.07.2015

| Sl.No. | Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 20.07.2015 | 17.08.2015 | 8.347 | 514.5 | 22.87 |
| 2 | 20.07.2015 | 17.08.2015 | 8.256 | 496.3 | 22.06 |
| 3 | 20.07.2015 | 17.08.2015 | 8.412 | 522.7 | 23.23 |

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#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/CUBE/2015-16 20.08.2015

## TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. B.T. Ravikumar,**
No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079.

*** Name of the work** : Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore.

*** Reference** : BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015

*** Sample ID** : Cement Concrete

**Size of cubes** : 150mmx150mmx150mm

**Cross Sectional Area** : 22500 $mm^2$

**Technical Reference** : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : $M_{20}$

**Compressive Strength as o:** : $28^{th}$ day

**Sample Received on** : 23.07.2015

| Sl.No. | Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 23.07.2015 | 20.08.2015 | 8.364 | 507.7 | 22.56 |
| 2 | 23.07.2015 | 20.08.2015 | 8.158 | 484.2 | 21.52 |
| 3 | 23.07.2015 | 20.08.2015 | 8.272 | 498.5 | 22.16 |

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VISHWANATH ...
Chief Executive Officer


#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/BTR/W.No.13/CSR.7/884g/Pre slab/2015-16 03.08.2015

## TEST REPORT ON CONCRETE CORE (PRECAST SLAB)

| | | |
|---|---|---|
| * Name of Client | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| * Name of Agency | : | **Mr. B.T. Ravikumar,** No.180, 3rd Main, H.V.R. Layout, Magadi Road, Bangalore – 560 079. |
| * Name of work | : | Construction of Culverts in Different locations at Mallasandra area in Ward No.13 in SSD, BBMP, Bangalore. |
| Referece | : | BBMP/AEE/SSD/DZ/PR/2015-16 Dated: 02.07.2015 |
| Techinical Reference | : | IS:516-1959 (Reaffirmed 2008), SP-24:1983. |
| Sample ID | : | Precast Slab |
| Sample received on | : | 01.08.2015 |
| Date of Testing | : | 03.08.2015 |
| Grade of Concrete | : | $M_{20}$ |

| Sl. No. | Dia of Core D (mm) | Height of Core H (mm) | Core Wt (Kg) | Density of Core (kg / $m^3$) | H / D | Correction factor (Based on H/D) | Failure Load (kN) | Core Strength ( $N/mm^2$) | Correction Factor for the Dia. (Strength of the Core x 1.08) | Corrected Cylinder Compressive Strength ($N/mm^2$) | Equivalent Cube Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50.00 | 79.00 | 0.396 | 2552.93 | 1.58 | 0.960 | 32.85 | 16.73 | 18.07 | 17.35 | 21.68 |
| 2 | 50.00 | 77.00 | 0.387 | 2559.71 | 1.54 | 0.955 | 32.30 | 16.45 | 17.77 | 16.97 | 21.21 |
| 3 | 50.00 | 81.00 | 0.405 | 2546.48 | 1.62 | 0.965 | 33.65 | 17.14 | 18.51 | 17.86 | 22.33 |

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Civil-Tech Consultants & Engineers Bangalore

********


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